## **EUROPEAN PATENT OFFICE**

## **Patent Abstracts of Japan**

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APPLICANT: YAMAHA MOTOR CO LTD;

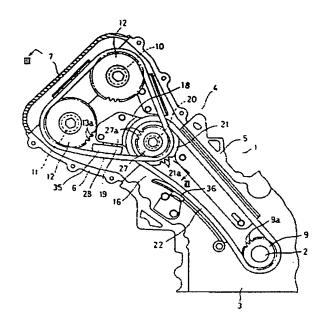
INVENTOR: KUMAGAI SATOSHI;

INT.CL.

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TITLE

: OVERHEAD CAM SHAPED-ENGINE



ABSTRACT: PURPOSE: To miniaturize the timing sprocket on a cam shaft by setting the pitch of a secondary timing chain smaller than the pitch of a primary timing chain.

> CONSTITUTION: A primary timing chain 22 is booked between a crank shaft 2 and the primary sprocket 21 which is provided on an intermediate shaft 20 provided between cam shafts 10, 11 for valve system and the crank shaft 2, while a secondary timing chain 28 is hooked between the timing sprocket 12 provided on the cam shafts 10, 11 and a secondary sprocket 27 rotating integratedly with the primary sprocket 21. The rotation of a crank shaft 2 is decelerated on the intermediate shaft 20, and after that the rotation is transmitted to the cam shafts 10, 11. In this occasion, the pitch of the secondary timing chain 28 is set smaller than the pitch of the primary timing chain 22. It is thus possible to minify the outer diameter without changing sharply a deceleration ratio between the cam shafts 10, 11 and the intermediate shaft 20, since the pitch of the gear tooth of the timing sprocket 12 becomes small.

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